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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,830	04/26/2005	Hiroshi Shimada	Q87428	8875

23373 7590 06/25/2010

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EXAMINER	
GAKH, YELENA G	

ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
06/25/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/532,830	SHIMADA ET AL.	
	Examiner	Art Unit	
	Yelena G. Gakh, Ph.D.	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Amendment filed on 05/03/10 is acknowledged. Claims 23-44 are pending in the application.

Response to Amendment

2. In light of the amendment the examiner withdraws objection of the specification and claims, maintains rejections under 35 U.S.C. 112, first paragraph, and partially modifies rejections under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 23-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The pending claims recite a method and an apparatus for managing one or more denitration catalysts by measuring a performance of the denitration catalysts in consideration of a of inlet NH_3 to inlet NO_x. At the same time the specification discloses measuring the performance of the catalyst on the basis of the **ratios $[NH_3]/[NO_x]$ for the inlet and outlet according to equation (2)**. No other ways of measuring this ratio and thus the performance, are disclosed in the specification. Furthermore, it would be impossible to measure performance of the catalyst on the basis of the ratio of inlet $[NH_3]$ to inlet $[NO_x]$, especially in the case of one catalyst, because then it would mean that the gases did not pass through the catalyst.

The examiner respectfully reminds the Applicants that according to MPEP §2163:

> "**2163.02. Standard for Determining Compliance with Written Description Requirement**:
>
> The courts have described the essential question to be addressed in a description requirement issue in a variety of ways. An objective standard for determining compliance with the written description requirement is, "does the description clearly allow persons of ordinary skill in the art

> to recognize that he or she invented what is claimed." *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989). Under *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. The test for sufficiency of support in a parent application is whether the disclosure of the application relied upon "reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter." *Ralston Purina Co. v. Far-Mar-Co., Inc.*, 772 F.2d 1570, 1575, 227 USPQ 177, 179 (Fed. Cir. 1985) (quoting In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983)). Whenever the issue arises, the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. See, e.g., *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was "ready for patenting" such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention. See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 68, 119 S.Ct. 304, 312, 48 USPQ2d 1641, 1647 (1998); *Regents of the University of California v. Eli Lilly*, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997); *Amgen, Inc. v. Chugai Pharmaceutical*, 927 F.2d 1200, 1206, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991) (one must define a compound by "whatever characteristics sufficiently distinguish it").

As it follows from above the Applicants did not show "possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention". The claimed invention should include specific equation (2), in order to correspond to the written disclosure.

5. Claims 23-44 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the method comprising measuring a performance through evaluation of the ratio of $[NH_3]$ and $[NO_x]$ at the inlet and outlet sides according to equation (2) of the specification, does not reasonably provide enablement for the method, which is not based on this equation. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. The claims recite that the performance of the denitrition catalyst(s) is measured on the basis of a ratio of inlet $[NH_3]/[NO_x]$. In the case of just one catalyst ("*one* or more catalysts") it means that the mixture of NH_3 and NO_x gases does not pass over the catalyst. There is no way

to measure the efficiency of the catalyst if the gases do not pass over the catalyst. The specification discloses specifically that the denitration ratio η based on the NH_3 concentration is calculated for inlet and outlet $[NH_3]$ and $[NO_x]$ and is expressed through equation (2). It would be impossible for a person of ordinary skill in the art to measure a performance of the denitration catalysts based on the inlet ratio of $[NH_3]$ and $[NO_x]$ for one catalyst, and it would have been undue experimentation to measure such performance on the basis of any other equation then equation (2).

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 23-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

From all independent claims it is not clear, how the concentrations of NH_3 and NO_x are related to each other, and how it is possible to determine the extent of deteriorations based on their values. Furthermore, claim 23 recites "**one** or more catalysts". It is not clear, how it is possible to measure a performance of one denitration catalyst on the basis of the inlet $[NH_3]$ and $[NO_x]$, when in this case the gases obviously do not pass over the catalyst? It appears that essential steps in the method are omitted from the claims. In particular, the claims should be based on equation (2) from the specification.

Furthermore, it is not apparent, as to how the last step of the method is performed - are there any criteria for determining, which process is to be performed? If there are criteria for such determination, they are essential for performing the method and therefore should be recited in the claims.

In claim 24 it is not apparent, as to what is meant by the "plurality of ways of regeneration", and whether there are any criteria for determining how the optimum way should be selected.

From claim 25 it is not apparent, whether the replacing catalyst should have a better performance, then the one that was tested. It is also not clear, if such performance was evaluated before the replacement.

In claims 30, 31 and 35 it is not clear, how the shape of the catalyst is altered.

In claim 32 it is not apparent, as to whether specific criteria are used for such determination.

From claim 33 it is not clear, whether the catalyst which will be added has specific performance parameters.

From claim 35 it is not apparent, as to how the execution timing for regeneration is determined. It appears that the only time which can be defined would be immediate replacement in the case of a bad performance of the catalyst. It is not clear, which other options are recited in the claim.

Claims 40-44 are unclear regarding their terminology. What is a "receiving unit that receives information"? Is this a computer? Is this something else?

What is "a stores unit that stores information"? Is this a computer media?

What is "a determining unit that determines"? Is this CPU with a specific program?

The claims obviously omit essential apparatus elements, such as sensors for measuring inlet and outlet [NH_3] and [NO_x].

Response to Arguments

8. Applicant's arguments filed 05/03/10 have been fully considered but they are not persuasive. The Applicants' arguments do not address most of the issues raised by the examiner in the previous Office action related to 112, first paragraph, lack of written disclosure and the scope of enablement, and 112, second paragraphs. The claim language still does not correspond to the disclosure.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Y. Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

06/20/2010

/Yelena G. Gakh/
Primary Examiner, Art Unit 1797